UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: DA VINCI SURGICAL ROBOT ANTITRUST LITIGATION, THIS DOCUMENT RELATES TO: ALL CASES.	LEAD LEAD CASE NO.: 3:21-cv-03825-VC
SURGICAL INSTRUMENT SERVICE COMPANY, INC, Plaintiff, v. INTUITIVE SURGICAL, INC., Defendant.	CASE NO. 3:21-cv-03496-VC

DEPOSITION OF ROBERT HOWE
VOLUME I
REMOTELY IN BOSTON, MASSACHUSETTS
FRIDAY, FEBRUARY 24, 2023

REPORTED BY: NATALIE PARVIZI-AZAD, CSR, RPR, RSR
CSR NO. 14125
JOB NO.: 5754439

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: DA VINCI SURGICAL ROBOT ANTITRUST LITIGATION,	LEAD CASE NO.:
THIS DOCUMENT RELATES TO: ALL CASES.	3:21-CV-03825-VC

DEPOSITION OF ROBERT HOWE, VOLUME I
TAKEN ON BEHALF OF THE PLAINTIFF
REMOTELY VIA ZOOM VIDEOCONFERENCING, IN
BOSTON, MASSACHUSETTS, BEGINNING AT
9:24 A.M. AND ENDING AT 4:03 P.M., ON
FRIDAY, FEBRUARY 24, 2023, BEFORE
NATALIE PARVIZI-AZAD, CERTIFIED SHORTHAND
REPORTER NUMBER 14125.

A P P E A R A N C E S

FOR THE PLAINTIFF, SURGICAL INSTRUMENT SERVICE COMPANY, INC:

HALEY GUILIANO, LLP
BY: JOSH VAN HOVEN, ESQ.
111 NORTH MARKET STREET
SUITE 900
SAN JOSE, CALIFORNIA 95113
(669) 213-1061
JOSHUA.VANHOVEN@HGLAW.COM

- AND -

SPECTOR ROSEMAN & KODROFF, P.C.
BY: JEFFREY R. CORRIGAN, ESQ.
TWO COMMERCE SQUARE
2001 MARKET STREET
SUITE 3420
PHILADELPHIA, PENNSYLVANIA 19103
(215) 496-0300
JCORRIGAN@SRKATTORNEYS.COM.

FOR THE PROPOSED CLASS, HOSPITAL PLAINTIFFS:

BONI, ZACK & SNYDER, LLC
BY: JOSHUA SNYDER, ESQ.
BY: JOHN SINDONI, ESQ.
15 ST. ASAPHS ROAD
BALA CYNWYD, PENNSYLVANIA 19004
(610) 822-0200
JSNYDER@BONIZACK.COM
JSINDONI@BONIZACK.COM

FOR THE DEFENDANTS, INTUITIVE SURGICAL, INC.:

COVINGTON & BURLING, LLP
BY: ISAAC CHAPUT, ESQ.
415 MISSION STREET
FLOOR 54
SAN FRANCISCO, CALIFORNIA 94105
(415) 591-6000
ICHAPUT@COV.COM

A P P E A R A N C E S

ALSO PRESENT:

FRANKIE MATUS, VIDEOGRAPHER;

KIM PARNELL, PLAINTIFF'S EXPERT

for many years. Certainly during my, you know, university training and graduate school.

Q. What do you mean it's so fundamental --

A. I was -- sorry, it goes back further than that. Every freshman physics class considers pulleys, so that would be my first year of college that I formally looked at forces and motions and pulleys.

Q. And through your education and your work, have you seen pulleys in a number of devices in addition to EndoWrists?

A. Yes.

Q. What are some examples of those?

A. Well, I'll start with some of the beautiful mechanical designs from Dr. Ken Salisbury, who invented the EndoWrist. He's perhaps the best designer of cable drive systems that I'm familiar with. One great example is the PHANToM haptic interface. This revolutionized the force feedback field for human-machine interfaces. It uses what are called capstan drives and pulleys in order to provide high gear ratios from small electric motors with essentially no friction and backlash. I can go on, if you like, and offer more examples.

Q. Would it be fair to say that you have

probably seen hundreds of devices that have pulleys of some sort?

MR. CHAPUT: Object to the form.

A. Yes.

Q. And I believe you talked about a -- I don't know if it's Mr. or Dr. Salisbury designing a pulley system.

Is that true?

A. I do.

Q. What is your understanding of when your design was initially done?

A. In the 1990s.

Q. You also -- the -- said the Si EndoWrist instruments have pins or dogs?

A. I did.

Q. What's your understanding of the function of a pin or dog in an Si EndoWrist instrument?

A. So they're located some distance from the center of rotation of the disk and pulley, and they interlock with a mating hole on the drive side of the robot, and they enable the application of forces from the motor drive to the disk, and thus generate a torque around the axis of the pulley or disk.

Q. And when you talk about application of forces from the motor drive to the disk, that's via